

Systemic Risk and Climate Change

What if the claimed consensus is wrong?

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Abstract

Purpose: *Challenging outdated and erroneous assumptions that underpin the low carbon agenda to highlight systemic or macro risks arising from a misunderstanding of climate change.*

Design/methodology/approach: *This paper is the product of non-hierarchical, self-organised, co-creative learning.*

Findings: *Contrary to popular perception, there is no scientific consensus on CO₂ driving climate change and we are in a period of negative discovery – the more we learn about climate, the less we can attribute the recent warming to CO₂; many studies point to the dominance of natural cycles and, since 2010, cumulative studies indicate imminent cooling which is, potentially, a more serious threat than global warming. In short, the science is not settled.*

Research limitations/implications: *Misperceptions of climate change are giving rise to systemic or macro risks through misallocation of resources.*

Practical implications: *Should temperatures plummet significantly, as they have many times in the past, the low carbon economy will be exposed as seriously deficient and vulnerable. Increased frequency and severity of storms will raise insurance and other costs.*

Social implications: *Food and energy shortages are likely to be a product of significant global cooling and may be exacerbated by adoption of low carbon policies and investments.*

Originality/value: *The IPCC was specifically established and funded to assess human-induced climate change and its impacts. Other academic institutions are incentivised through funding and elevated status to support the illusory consensus on climate change. This paper is an unfunded and impartial challenge to orthodox thinking on climate change from a risk management perspective.*

Keywords: global warming; climate change; consensus, IPCC; Assessment Report; Summary for Policy Makers; SPM; low carbon economy; CO₂; global cooling; impacts; extreme weather; energy; political economy; macro risk; systemic risk; groupthink; co-creative learning;

1. What consensus?

Do the majority of climate scientists support the alleged consensus on man-made global warming? (referred to in the literature as anthropogenic global warming (AGW) and sometimes referred to as catastrophic, ie. CAGW - See Section 6).

Following the publication, in 2007, of the IPCC's Fourth Assessment Report (AR4), it was stated in media reports that the IPCC's claim of human influence on climate was supported by almost 4,000 authors and reviewers; the IPCC's publicity flyer for AR4 referred to 2,500+ reviewers and 1,250+ authors. John McLean analysed the AR4 papers to determine how many scientists and authors supported this statement and discovered only 60 explicitly supported the claim.¹

1 The IPCC can't count its "expert scientists":- Author and reviewer numbers are wrong by John McLean
http://mclean.ch/climate/docs/IPCC_numbers.pdf

2. Suppression of evidence

A paradox persists in the global warming/climate change debate. Those who support the claimed consensus enjoy funding and opportunities to promote their work, whereas those who challenge the authorised narrative are attacked and vilified while their credibility is called into question. Professor Richard Lindzen of MIT said in a 2007 article: “*Scientists who dissent from the alarmism have seen their grant funds disappear, their work derided.*”² There are considerable financial and reputational costs to dissent.

Hal Lewis resigned from the American Physical Society (APS) in a letter detailing his reasons, sent by email and dated 8th October 2010. Lewis’s letter was replicated on the UK Telegraph newspaper’s website on 9th October 2010 but has been subsequently removed. The WayBackMachine i) shows that Lewis’s letter was removed; and ii) allows us to access the letter as published by the Telegraph.³

There are many examples of information or evidence being removed, edited or suppressed to obfuscate or hide dissent among climate scientists and evidence that undermines or invalidates the AGW theory:

166 climate scientists issued a challenge to former UN Secretary General, Ban Ki Moon, on the eve of the Copenhagen Climate Summit in 2009, to provide proof of human induced global warming, saying that we are in a period of negative discovery, ie. the more we learn, the less convincing is the argument for anthropogenic (or man-made) global warming.⁴ (page removed but available on the WayBackMachine)

700 scientists have made submissions to the US Senate expressing dissent from the consensus.⁵ (page removed but available on the WayBackMachine)

Wikipedia is useful when looking for uncontroversial information but it is not an impartial source of information on climate nor on many other controversial issues or events. In December 2009, following the Climategate revelations (See Section 8) and coinciding with UN Copenhagen Summit on Climate Change, Canadian investigative journalist, Lawrence Solomon, reported how William Connolly was found to have removed or edited 5428 Wikipedia entries relating to climate. Solomon's original article first disappeared from the National Post website and later from the WayBackMachine; it is replicated elsewhere⁶

The BBC's reporting on climate change has been stridently partisan, in spite of the prevailing uncertainty and dispute among scientists over man-made CO₂'s culpability. A secret BBC meeting in 2006, convened by global warming activists, led to the blanket suppression of evidence and information which contradicted the man-made global warming hypothesis. A six-year freedom of information battle, by a private citizen, to get the BBC to disclose who attended the meeting was subject to legal action.⁷

2 Climate of Fear: Global Warming Alarmists Intimidate Dissenting Scientists into Silence By Prof. Richard Lindzen <https://www.globalresearch.ca/climate-of-fear-global-warming-alarmists-intimidate-dissenting-scientists-into-silence/5294>

3 <https://web.archive.org/web/20160608114416/http://my.telegraph.co.uk/reasonmclucus/reasonmclucus/15835660/professor-emiritus-hal-lewis-resigns-from-american-physical-society/>

4 <https://web.archive.org/web/20120502140009/http://www.copenhagenclimatchallenge.org/>

5 https://web.archive.org/web/20091202014754/http://epw.senate.gov/public/index.cfm?FuseAction=Minority.Blogs&ContentRecord_id=2674e64f-802a-23ad-490b-bd9faf4dcdb7

6 <https://wattsupwiththat.com/2009/12/19/wikibullies-at-work-the-national-post-exposes-broad-trust-issues-over-wikipedia-climate-information/>

7 Who were the SECRET 28 who ended all climate debate at the BBC? https://www.theregister.co.uk/2012/10/29/boaden_tribunal_information_refusal/

3. The IPCC is not an impartial referee of climate science

The IPCC (Intergovernmental Panel on Climate Change) was specifically established to assess *human-induced climate change*; this mission statement or definition of “role” has been subsequently watered down but the original⁸ clearly states this. The IPCC’s *raison d’être* is inextricably dependent on a causal link between CO² and global warming. Consequently, neither the IPCC nor any of those who benefit from association with it, either financially or reputationally, can be regarded as impartial in their assessment of the causes of climate change. Without a causal link, neither they nor the IPCC would benefit; the stakes, both reputationally and financially, as Hal Lewis suggests in his letter referred to in Section 2, are very high.

A later, 2008, version of the IPCC’s “About” website page is no longer available but as statistician Steve McIntyre reported at the time⁹, there was this inclusion/addition of: *Its role is to assess on a comprehensive, objective, open and transparent basis the **latest scientific, technical and socio-economic literature** produced worldwide relevant to the understanding of the risk of human-induced climate change.*

The rationale for this assessment of the literature was/is to provide policy makers and others with an overview or synthesis of the available information in order that appropriate actions or steps can be taken to mitigate the potential threats or risks arising from man-made global warming.

In the body of the IPCC’s assessment reports, such as AR5 released in 2014, are the scientific papers which represent the accumulated knowledge of the climate system at that time but most people (particularly politicians and journalists) don’t have the time, expertise or inclination to digest all the papers for themselves, so they rely on the *Summary for Policy Makers* (SPM).

The SPM is a crucial document which acts as the transmission mechanism to turn dense academic papers on climate science and impacts into government policies. It is also relied on by many as the definitive authority on climate science but in this regard it fails to reflect reality – the AGW case is at best uncertain; the balance of probability is that natural cycles dominate climate.

The SPM is drawn up, not by scientists representing the academic papers underpinning each assessment report but by a narrow coterie of climate scientists and some 195 government delegations which “negotiate” the final text. Negotiate is the operative word because huge wealth transfers between countries are potentially involved and those anxious to benefit have to ensure the AGW theory is sustained. Most of the delegates are incentivised to maximise the alarm not just through financial inducements but because their status and credibility are staked on perpetuating it. As long as this self-interested groupthink prevails, growing numbers of people and organisations not only “buy into the narrative” but become “invested” in the resulting “green” agenda. This has created its own momentum which adds to the power of the narrative.

Two leading IPCC authors¹⁰ have written letters explaining why they’ve distanced themselves from the SPM to expose how many statements made by scientists in the original draft are removed, ensuring that any doubts or evidence which undermines the AGW theory are suppressed.

After all the caveats, doubts and contradictory evidence are removed from the SPM, one is left with the inescapable conclusion that man is causing global warming, irrespective that this conclusion is not supported by the accumulated evidence contained in the Assessment Report.

8 PRINCIPLES GOVERNING IPCC WORK

<https://web.archive.org/web/20071215224550/http://www.ipcc.ch/pdf/ipcc-principales/ipcc-principales.pdf>

9 Role of the IPCC <https://climateaudit.org/2008/01/08/role-of-the-ipcc/>

10 Stavins and Tol on IPCC WG3 <https://judithcurry.com/2014/04/26/stavins-and-tol-on-ipcc-wg3/>

For a more in-depth critique of the IPCC, see Donna Laframboise's book, *The Delinquent Teenager Who Was Mistaken for the World's Top Climate Expert*¹¹

4. The Stern Review

The Stern Review¹² was published on 30th October 2006, three years before the revelation that climate science is in a state of “negative discovery” referred to by the 166 scientists who challenged UN Secretary Ban Ki Moon (See Section 2), on the eve of the 2009 Copenhagen Climate Summit, ie. the more we learn about climate, the less we can attribute the cause of global warming to CO².

The Stern Report called for immediate action to curb CO² emissions and set the agenda for the UK's climate change planning and policy which remains unchanged 12 years later, ie. policy, planning and risk assessment continue in ignorance of the flawed premise to justify the *low carbon economy*.

A pause for thought and re-examination of the underlying premise of the *low carbon economy* is essential before we continue along the current trajectory with potentially disastrous consequences from a risk management perspective.

5. Perception of climate change risks

The recent discussion paper, Climate Change and Green Finance¹³, issued by the UK's Financial Conduct Authority (FCA) refers to physical risks as a result of climate change and market risks arising from moving to a *low carbon economy* and very much reflects the conclusions of the Stern Review (See Section 4)

The tacit assumption in the FCA's discussion paper is that the AGW theory is proven and that we should only consider the risk of global warming. The uncertainty of continued warming, evidenced by numerous climate studies (see Section 10) and satellite temperature data (see Fig. 3) means we ought to similarly assess what risks arise from global cooling.

Furthermore, if CO² is not the culprit, ie. man-made emissions are not the cause of the recent warming, we need to consider the physical, economic and financial risks which may arise from moving to a low carbon economy.

Physical risks with economic and financial consequences, commonly attributed to global warming are: extreme weather events (resulting in droughts, fires or floods), desertification (leading to lower food production capacity) and rising sea levels inundating populated regions or islands – there are many other effects claimed to be caused by warmer global temperatures but these few are most significant from a risk management perspective.

These risks are often adduced as additional evidence of man-made global warming.

5.1 Extreme weather events (resulting in droughts, fires or floods) – In 2005, a leading hurricane specialist, Chris Landsea, resigned from the IPCC in protest over repeated, unsubstantiated claims of man's CO² emissions causing extreme weather¹⁴. His 2007 study¹⁵, of hurricanes over the last 100 years, found no causal link or correlation between climate change and the frequency or intensity of hurricanes. A more recent study¹⁶ from the Institute for Environmental Studies, Amsterdam, found no correlation between climate change and extreme weather. It concluded rising insurance losses

11 <https://www.goodreads.com/book/show/12908271-the-delinquent-teenager-who-was-mistaken-for-the-world-s-top-climate-exp>

12 <http://www.lse.ac.uk/GranthamInstitute/publication/the-economics-of-climate-change-the-stern-review/>

13 <https://www.fca.org.uk/publication/discussion/dp18-08.pdf>

14 Chris Landsea Leaves IPCC <http://landscapesandcycles.net/chris-landsea-resigns-from-ipcc.html>

15 <https://www.aoml.noaa.gov/hrd/Landsea/landsea-eos-may012007.pdf>

were due to expanding populations in vulnerable areas. The 2012 IPCC SREX¹⁷ (extreme weather) report found no correlation between extreme weather and global warming.

5.2 Desertification – a number of studies counter the claim that increased CO² is detrimental to vegetation and consequently prejudicial to agriculture and food production:

*Study: increased carbon dioxide is greening deserts globally*¹⁸

*700,000 Square Kilometers Of Added Green Vegetation, Climate Change Shrinks Sahara Desert By Whopping 8%!*¹⁹

*Deserts 'greening' from rising CO²*²⁰

*Carbon Dioxide Fertilization Greening Earth, Study Finds*²¹

5.3 Rising sea levels – in the same way that there is no scientific consensus on climate change, there is disagreement on likely trends in sea levels. First, to talk of “global” sea level is misleading because sea levels are affected by many factors other than climate such as localised vertical land movement.²² Further, the margin of error in measuring sea level is far greater than the values used to project future trends.²³ The Maldives are often referred to as being under threat from climate change and yet, in spite of dire predictions 30 years ago, the Maldives and other coral islands may actually be expanding.²⁴

Climatic drivers of sea levels are thermal expansion of the oceans and ice melt on land (glaciers and Antarctic ice²⁵ primarily – Arctic ice floats and displaces its equivalent weight of water, thus having no appreciable effect on sea level); there are studies that refute the claims that ice melt is currently exceptional, ie. glaciers and Antarctic ice remain within the boundaries of historic variability. Furthermore, some studies reveal evidence ice growth in relation to both, thus adding weight to the claims of a cooling climate²⁶.

In summary, there seems to be little or no physical risk, of financial significance, arising from a warmer climate which, in any event, seems not to be in danger of breaching historical levels of warmth experienced during the Medieval and Roman warm periods (see Section 7). In fact, compared to the Little Ice Age (see Section 11), current temperatures are beneficial.

16 Have Disaster Losses Increased Due to Anthropogenic Climate Change? Laurens M. Bouwer
<https://journals.ametsoc.org/doi/10.1175/2010BAMS3092.1>

17 A Handy Bullshit Button on Disasters and Climate Change <http://rogerpielkejr.blogspot.com/2012/03/handy-bullshit-button-on-disasters-and.html>

18 <https://wattsupwiththat.com/2016/02/16/study-increased-carbon-dioxide-is-greening-deserts-globally/>

19 <https://notrickszone.com/2019/01/16/700000-square-kilometers-of-added-green-vegetation-climate-change-shrinks-sahara-desert-by-whopping-8/>

20 <https://phys.org/news/2013-07-greening-co2.html>

21 <https://www.nasa.gov/feature/goddard/2016/carbon-dioxide-fertilization-greening-earth/>

22 SEA LEVEL: Rise and Fall – Part 3 – Computational Hubris <https://wattsupwiththat.com/2017/12/19/sea-level-rise-and-fall-part-3-computational-hubris/>

23 Sea Level Rise: Climate Change and an Ocean of Natural Variability <https://wattsupwiththat.com/2013/09/20/sea-level-rise-climate-change-and-an-ocean-of-natural-variability/#more-94152>

24 30 Years Ago Officials Predicted The Maldives Would Be Swallowed By The Sea. It Didn't Happen
<https://dailycaller.com/2018/09/21/maldives-global-warming-sea-level/>

25 https://www.iceagenow.com/List_of_Expanding_Glaciers.htm

26 <https://web.archive.org/web/20190228024211/https://www.v3.co.uk/v3-uk/news/3065852/researchers-raise-doubts-about-scientific-paper-claiming-rising-ocean-temperature>

6. Anthropogenic global warming (AGW)

The UK Met Office diagram (Fig. 1) and accompanying explanation below are no longer available on the Met Office website which, despite now giving some credence to solar influences, still asserts that CO² is the primary driver of climate change.²⁷

In 2010, the UK Met Office described the Anthropogenic Global Warming (AGW) hypothesis as follows: *“It is now clear that man-made greenhouse gases are causing climate change. The rate of change began as significant, has become alarming and is simply unsustainable in the long term.”*

The greenhouse effect was depicted on their website thus:

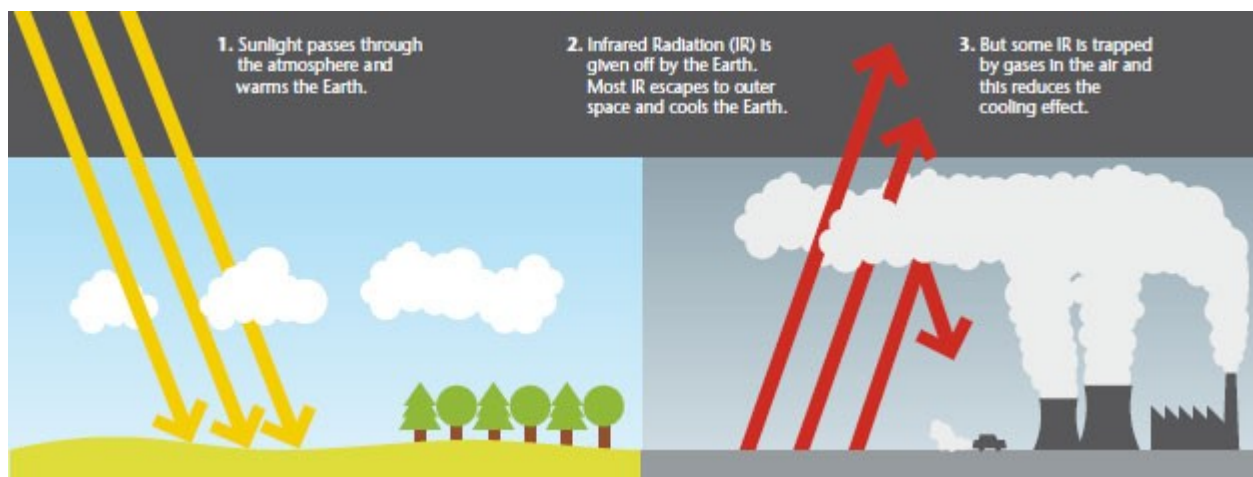


Fig. 1 From the UK Met Office website and information leaflet delivered to UK households in 2010

Solar rays hit the earth and heat up the surface (as shown on the left of Fig. 1). The earth's surface emits infrared radiation back into space thereby cooling the planet (depicted by two of the red arrows in the right hand picture). Greenhouse gases in the troposphere trap some of the infrared rays reflecting heat back down to the surface. The AGW theory claims that increased CO² concentrations in the atmosphere, caused by humans, is trapping more infrared energy thereby raising global temperatures.

For the theory to hold true, the observable rate of temperature increase would be higher in the troposphere than at the earth's surface. The rate of temperature increase would be most noticeable in the tropics because that is where the surface would be radiating the most heat.

Yet observations, from radiosonde (weather balloons) and satellite data have consistently shown that not to be the case:

²⁷ Why is our climate changing? <https://www.metoffice.gov.uk/climate-guide/climate-change/why>

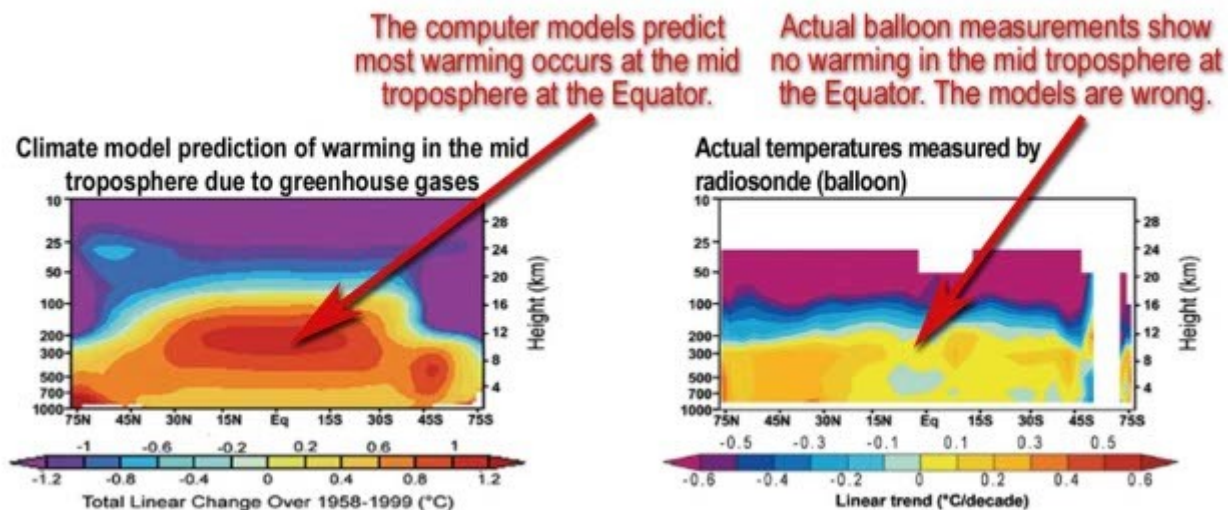


Fig. 2 Images from The Missing Hotspot – Dr David Evans

The left hand picture in Fig. 2 is the climate model prediction of warming in the mid troposphere due to greenhouse gases from 1958 to 1999. The computer models predict most warming occurs at the mid troposphere at the Equator. The right hand picture shows actual temperatures measured over the same period by radiosonde (weather balloon). Actual balloon measurements show no increase in the rate of warming in the mid troposphere at the Equator, ie. *no evidence of hot-spots in the troposphere; it is notable that none of the scientific papers supporting the AGW theory have claimed to have found such evidence.*²⁸

In short, the AGW theory is not supported by the evidence. Had the AGW hypothesis been subject to the proper scientific method, the failure to substantiate this fundamental premise (of increased warming in the troposphere over the Equator) would have rendered the man-made global warming theory invalid.

7. Measuring global temperature

There are two types of temperature record, those directly recorded in real time and those which are recreated using a variety of techniques (often referred to as proxy records) to try to understand changes in temperature long before recorded temperatures were available.

It is important to understand that there is no such thing as a global temperature. What is referred to, when talking about climate change, is an approximation of global temperatures derived from a limited number of data sets. There is no definitive, long term record of global temperatures. Surface temperature records go back to about 1850 but early records are restricted to a small number of locations mainly in the northern hemisphere. Later records are affected by the Urban Heat Island (UHI) effect: temperature recording instruments, once sited in remote locations, are now surrounded by urban environments. UHI exaggerates the perceived warming. Where records are missing, they've been estimated. Anthony Watts, a retired meteorologist, has undertaken extensive research into surface temperature data²⁹.

²⁸ <http://sciencespeak.com/MissingSignature.pdf>

²⁹ <https://wattsupwiththat.com/global-temperature/>

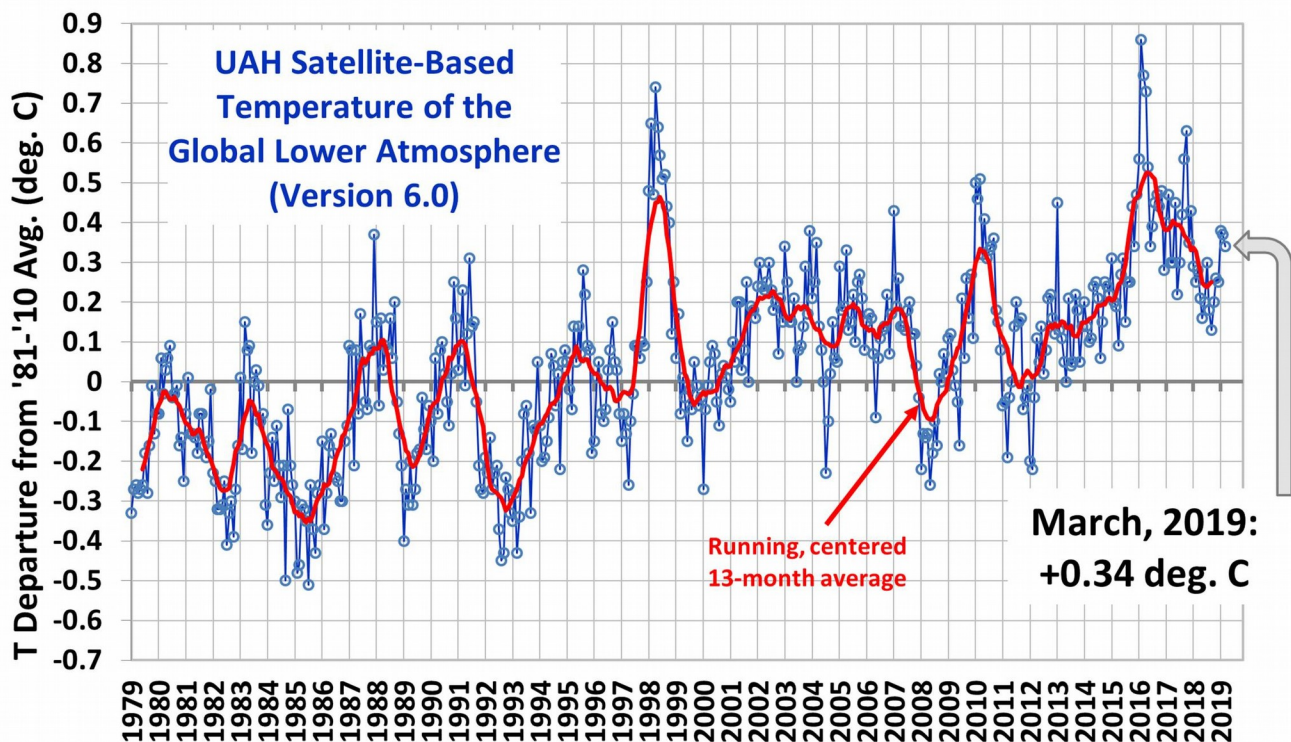


Fig. 3 Latest Global Average Tropospheric Temperatures

Satellite data are probably the most reliable guide to global temperature that we have but only since 1979. They do, however, give us a clear view month by month as to where we stand. Satellite temperature data (see Fig. 3) show no evidence of the predicted runaway warming.³⁰

If we look back at the recorded surface temperature records they show a secular rise since the end of the Little Ice Age (c.1850) but with periods of warming and cooling. From about 1910 to 1940 there was a warming trend similar to what we saw from around 1975 to 2000. In between there was a cooling phase from about 1940 and this was in spite of rising CO² emissions in the post war industrial boom.

If we want to go back much further than 150 years to understand how today's temperatures compare with say 1000 years ago, we need to rely on anecdotal evidence and proxy temperature reconstructions.

The first IPCC Assessment Report in 1991 contained the HH Lamb graph (see Fig. 4) of temperatures over the last 1,000 years which accords with our understanding of the Medieval Warm Period (MWP) and the subsequent Little Ice Age (LIA) and for which there is ample anecdotal and archaeological evidence: the Vikings settled and farmed in Greenland from about 980 to 1400AD over the MWP; the settlements collapsed with the onset of the LIA; burial sites have been found in the permafrost; Pepys wrote of the Great Frost Fair of 1683 and skating on the Thames when the river and surrounding estuary froze for weeks over winter. That temperatures have been rising since end of the LIA (c.1820) is neither surprising nor alarming.

30 <http://www.drroyspencer.com/latest-global-temperatures/>

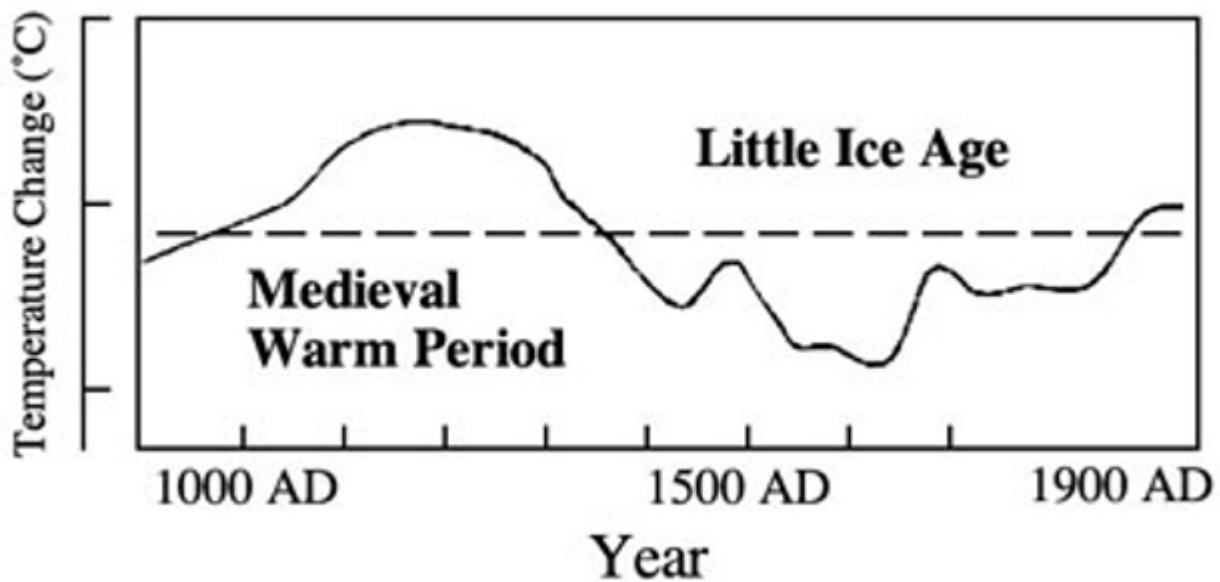


Fig. 4 HH Lamb graph of 1000 years of global temperature used for the first IPCC assessment report in 1991

8. Climategate

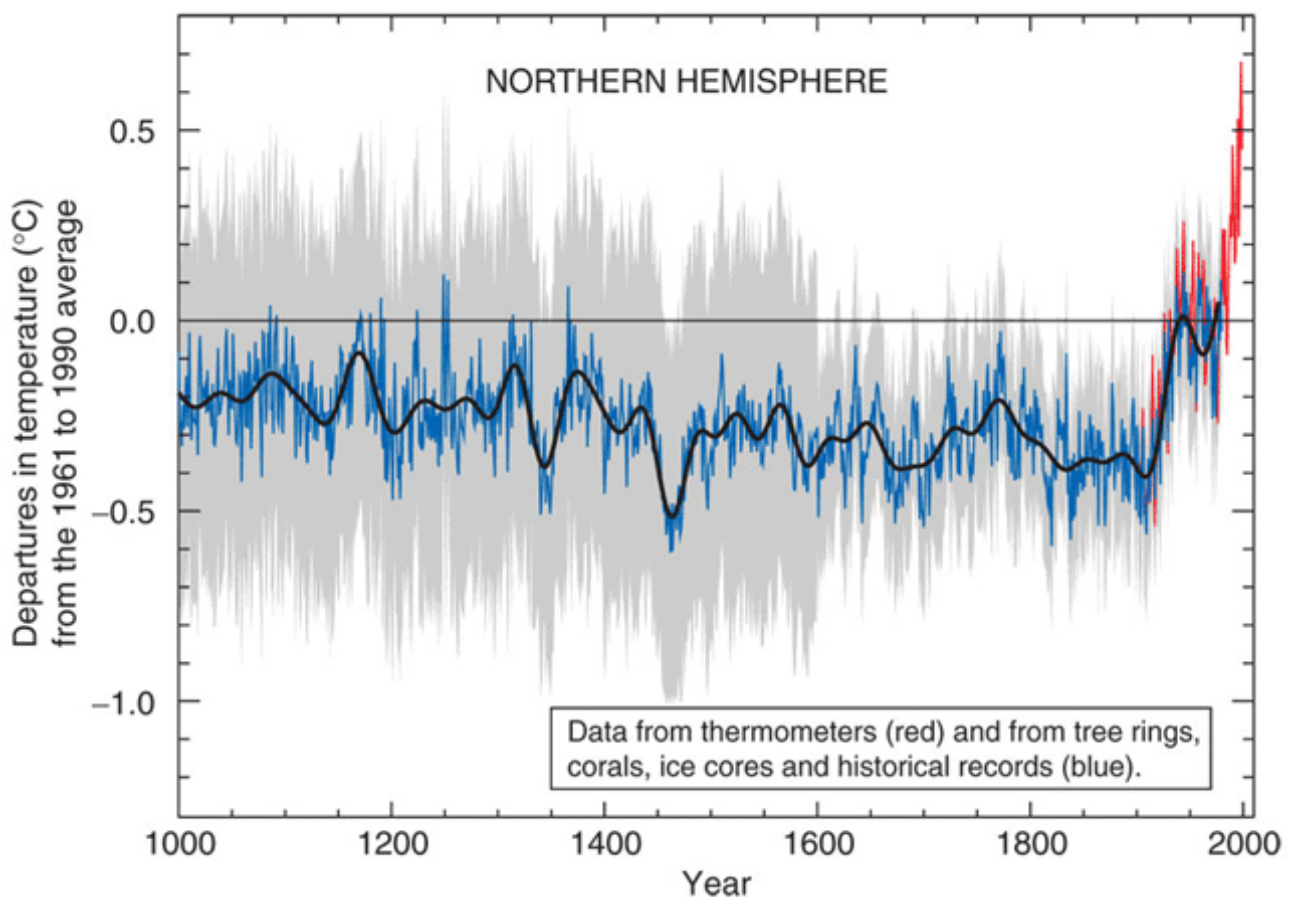


Fig. 5 The hockey stick graph as it appeared in the IPCC Third Assessment Report WG1 (2001) summary, Figure 2.20, Northern Hemisphere temperature reconstruction.

For the Third Assessment Report in 2001, the IPCC published the Hockey Stick graph (see Fig. 5) based on proxy data. This was produced in a paper (MBH98) by Michael Mann and others, claiming that the 1990s was the hottest decade of the millennium. A retired geologist and mathematician, Steve McIntyre, together with Ross McKittrick, an economics professor and

statistician, set out to replicate Mann's work but found statistical errors and manipulation of data had produced the hockey stick.³¹ Subsequently, the Wegman Committee³², appointed by the US Senate to adjudicate on the hockey stick, found in favour of McIntyre and McKittrick to confirm the flaws and repudiate the claim that the 1990s was the hottest decade of the last 1,000 years. A 2011 paper by McShane and Wyner³³, two statisticians, demonstrates why the original and subsequent versions of the hockey stick are flawed and not a reliable guide to global temperatures.

No evidence suggests recent temperatures are unprecedented; on the contrary, there is circumstantial evidence that temperatures have been higher in the past and possibly as recently as the 1940s.

In the autumn of 2009, in advance of the UN Copenhagen Climate Summit, leaked documents and emails³⁴ from the University of East Anglia's Climatic Research Unit (CRU) exposed collusion and manipulation of data to produce hockey stick graphs. Michael Mann and Phil Jones, the head of CRU, resisted requests from other scientists for data, methodologies and programs, in direct contravention of the scientific method. Former cabinet secretary, Lord Turnbull³⁵, described the three UK inquiries, into what became known as Climategate, as "hasty and superficial." He has called for "a full review of the science itself." Ross McKittrick described the inadequacy of the (total of) five inquiries in a detailed critique.³⁶

9. What drives climate change?

Willie Soon's climate change research³⁷ shows that Arctic surface temperatures correlate with solar activity rather than CO² and suggests that the sun is the dominant driver of climate change.

Solar magnetism and galactic cosmic rays³⁸ appear to have a significant influence on albedo (reflective cloud cover) which has a cooling effect.

Solar influences³⁹ appear to interact with other cyclical phenomena such as the El-Nino Southern Oscillation which produces a warming pulse of varying intensity every 4-5 years. The Pacific Decadal Oscillation (PDO) has a 30 year cycle. The PDO's reversal from positive to negative in 2007 depressed temperatures worldwide and may herald a negative cycle, leading some climate specialists to predict cooling.

The Arctic Oscillation peaks every 60 to 70 years. It may have caused the warm spike in the 1940s as well as the recent warming. Sometimes, these oscillations cancel each other out and at other times they work in harmony.

31 The M&M Project: Replication Analysis of the Mann et al. Hockey Stick

<http://www.uoguelph.ca/~rmckitri/research/trc.html>

32 AD HOC COMMITTEE REPORT ON THE 'HOCKEY STICK' GLOBAL CLIMATE RECONSTRUCTION2

https://web.archive.org/web/20100612073030/http://republicans.energycommerce.house.gov/108/home/07142006_Wegman_Report.pdf

33 https://projecteuclid.org/download/pdfview_1/euclid.aoas/1300715170

34 THE CLIMATEGATE EMAILS <http://www.lavoisier.com.au/articles/greenhouse-science/climate-change/climategate-emails.pdf>

35 Former Civil Service chief calls for climate shakeup

http://www.theregister.co.uk/2010/09/14/lord_turnbull_interview/

36 Understanding the Climategate Inquiries

http://rossmckittrick.weebly.com/uploads/4/8/0/8/4808045/rmck_climategate.pdf

37 Willie Wei-Hock Soon <https://www.desmogblog.com/willie-soon>

38 Cosmic rays and climate <http://cdsweb.cern.ch/record/1181073/>

39 SOLAR CYCLE 24: EXPECTATIONS AND IMPLICATIONS
<http://www.davidarchibald.info/papers/Archibald2009E&E.pdf>

What becomes evident, when reviewing the depth and breadth of climate science, is that we're in a period of negative discovery: the more we learn, the less attribution to CO² is justifiable. We don't understand how the various cycles and many variables interact.

In short, **the science is by no means settled** and *we are incapable of making accurate predictions of climate change*. We are certainly not capable of controlling it.

10. Is Earth's climate in a cooling phase?

As long ago as 2010, the cumulative body of evidence from the broad climate science community suggested that we could be heading into a period of cooling, possibly analogous to the Little Ice Age.

Peter Taylor, author of *Chill: A reassessment of Global Warming*⁴⁰, gave a talk at the Energy Institute in London on 16th February 2010. In the talk, he explained that having spent three years talking to a wide variety of climate scientists and reviewing the academic literature, he had come to the conclusion that CO², if it played a role in global warming, was relatively insignificant compared to the dominance of natural cycles and particularly solar influences. He pointed to cumulative evidence of a "quieter sun", analogous to the conditions which prevailed during the Dalton and Maunder minima, ie. the Little Ice Age.

More evidence of this anticipated cooling has been accumulating since the release of Taylor's book, *Chill*, which was strongly endorsed by W Jackson Davis, author of the first draft of the Kyoto Protocol.

Dr. Don Easterbrook, Professor Emeritus of Geology, Western Washington State University, delivered his testimony to the Washington State Senate - Energy, Environment & Telecommunications Committee. on March 26, 2013.⁴¹ Easterbrook's work explores oceanic cycles which reinforce the notion that we are currently in a cooling phase.

Professor Valentina Zharkova has developed the Climate and the Solar Magnetic Field hypothesis; the historical correlation between solar magnetic variations and global temperatures suggests an imminent grand minimum which means the planet is about to get much colder.⁴²

Svensmark: "*global warming stopped and a cooling is beginning*" – "*enjoy global warming while it lasts*"⁴³

and recently from NASA:

*NASA Sees Climate Cooling Trend Thanks to Low Sun Activity*⁴⁴

In summary, cumulative evidence suggests a significantly higher probability of cooling than warming.

40 <https://www.outersite.org/chill-a-reassessment-of-global-warming-theory/>

41 Global Warming Testimony to Washington State Committee 3 -26-2013 <https://youtu.be/8BKBzc8vJtQ>

42 Solar Magnetic Field Oscillations Confirm Global Cooling is Upon Us
<https://www.armstrongeconomics.com/world-news/climate/solar-magnetic-field-oscillations-confirm-global-cooling-is-upon-us/>

43 <https://principia-scientific.org/svensmark-global-warming-stopped-and-a-cooling-is-beginning-enjoy-global-warming-while-it-lasts/>

44 <https://www.thenewamerican.com/tech/environment/item/30214-nasa-sees-climate-cooling-trend-thanks-to-low-sun-activity>

11. Systemic risks arising from the reality of climate change

We've not experienced the catastrophes which have been predicted for the last few decades and satellite data confirm runaway warming is not happening (see Fig. 3).

If predictions of cooling are correct, what risks do we face and are we exacerbating those risks by pursuing the goal of a *low carbon economy*?

More and more businesses and institutions are investing in the "green" agenda or aligning their organisations and operations to comply with laws and regulations which drive the *low carbon economy*. When perception catches up with reality, these organisations will suffer a similar "emperor's new clothes" moment to that which brought down the sup-prime mortgage market (See Section 12). Already, those who invested in some renewal energy schemes based on government subsidies have seen returns reduce or collapse when those subsidies are removed. Last year, it was reported that Germany's wind energy programme is in trouble.⁴⁵ This is just one example of macro or systemic risk arising from the *low carbon economy* agenda; there are undoubtedly more.

Furthermore, the low carbon agenda risks exacerbating the physical risks associated with global cooling.

While the probability of another Little Ice Age may be low, its effects would be devastating.

HH Lamb, who introduced the long term temperature graph (Fig.4) into the 1991 IPCC Assessment Report, described the great storms of the Little Ice Age. His book, CLIMATE, HISTORY AND THE MODERN WORLD⁴⁶ provides a long term perspective on climate which can help inform our view of climate and the risks that changes bring.

Lamb refers to 5°C drop in North Atlantic surface temperature, around 1700, increasing the thermal gradient which may account for the greater severity of storms at that time than today. He cites many coastal disasters from sea floods during the Little Ice Age, in spite of slightly lower sea levels, leading to loss of life. He also describes islands being demolished and how a 4000 year old settlement site in the Hebrides was overwhelmed with sand in 1697. He relates the extent of the damage arising from a storm in 1703 including how the Eddystone lighthouse near Plymouth was blown down. Houses across the country were damaged and in London estimates of the cost were around £2million. There were also numerous ships wrecked and up to 8000 lives lost.⁴⁷

Clearly from an insurance perspective, adverse weather events during prolonged periods of lower temperatures are a significant risk, as would be crop failure and many other accompanying phenomena. A low carbon economy is far more vulnerable to extreme cold, a situation in which we'll need to access all the energy sources we can find and develop safely.

The objective of this paper is not to prove that we're heading into a Little Ice Age but to suggest that our perception of climate risk is misaligned with reality. The reality being that climate seems to be driven by natural cycles rather than CO² emissions and that we are in danger of exacerbating the implicit risks in cooling by focusing on CO² as the main driver of global warming. Renewable

45 Germany's Wind Energy Mess: As Subsidies Expire, Thousands Of Turbines To Shut Down...Environmental Nightmare! <https://notrickszone.com/2018/04/24/germanys-wind-energy-mess-as-subsidies-expire-thousands-of-turbines-to-shut-down-environmental-nightmare/>

46 CLIMATE, HISTORY AND THE MODERN WORLD
https://www.goodreads.com/book/show/158379.Climate_History_and_the_Modern_World

47 HH Lamb & The Great Storms Of The Little Ice Age
<https://notalotofpeopleknowthat.wordpress.com/2015/11/16/hh-lamb-the-great-storms-of-the-little-ice-age/>

energy will not be sufficient to fulfil our energy needs in a colder climate. Both our energy and food systems lack essential resilience to withstand prolonged periods of significantly lower temperatures. In addition, from an economic/financial macro risk perspective, history suggests extreme weather events are more likely and give rise to more devastating impacts during prolonged periods of cold.

In a recent debate on climate change⁴⁸, former IPCC author, Judith Curry⁴⁹, suggested we adopt a “no-regrets” policy that incorporates resilience in the face of either warmer or cooler temperatures.

If financial institutions rely solely on outdated, flawed perceptions of climate change as justification to pursue the low carbon agenda, prescribed by the FCA and other institutions, they are in the same position as those who, in the sub-prime mortgage market, relied on the credit ratings agencies which were incentivised to grant AAA ratings to toxic securities (see Section 12): financial institutions are abdicating their responsibility for due diligence to untrustworthy third parties.

12. Institutional blindness

Government, regulatory, economic and financial institutions have taken the IPCC *Summary for Policy Makers* at face value without conducting their own, independent assessment of the current, accumulated knowledge of climate and are unaware of the lack of consensus. Individuals within these institutions may be aware or suspect that they are being misled by media and academia but reward structures dissuade them from speaking out because, as in the climate science community, dissent from the “consensus” comes at a price in terms of career prospects and social acceptance.

This problem of institutional blindness is not unique to the issue of climate change but pertains to all complex issues and systems. Regulators and most financial institutions were blind to the flaws in the sub-prime mortgage market. Compartmentalisation of accountability meant that few could see what was actually happening.

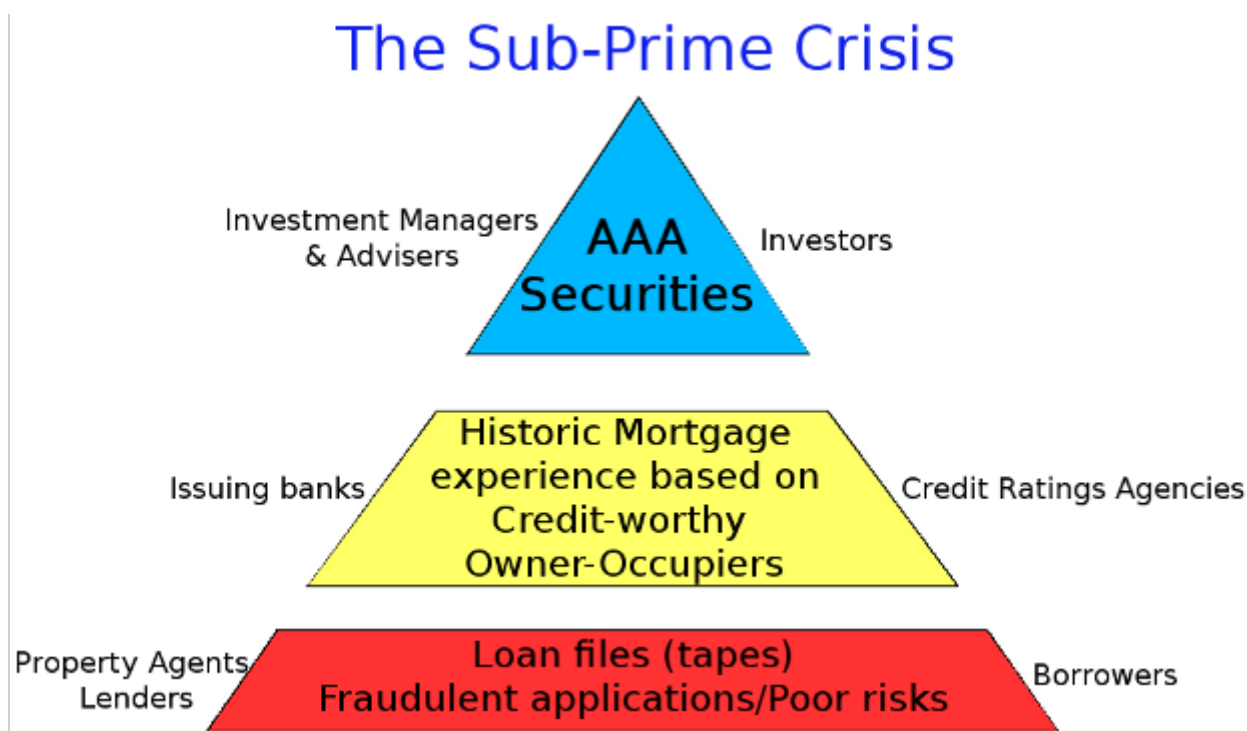


Fig. 6 Illustration from a 2010 presentation to the CISI (Chartered Institute for Securities and Investment) on parallels between the sub-prime mortgage market and carbon trading.

48 <https://www.bitchute.com/video/D5F5exoJrGDE/>

49 <https://judithcurry.com/>

Structural incentives obscured the toxic nature of mortgage backed securities and their derivatives, thus fomenting the sub-prime crisis.

Until the 1970s, investors delegated due diligence to credit rating agencies for which they paid a fee. When rating agencies started charging bond issuers for ratings, their financial interests converged. Investigations following the crisis revealed evidence of collusion between issuing banks and rating agencies, optimising risk profiles of securities to achieve AAA ratings. Credit raters had no access to the underlying mortgage data which contained fraudulent applications and loans to house buyers with insufficient earnings. Consequently, they applied ratings on the basis of historical mortgage data from an era when loans were only granted to credit worthy owner-occupiers (see Fig. 6).

Financial incentives ensured the true nature of the debt wasn't revealed. Buyers and property agents gained in a rising property market and lenders removed bad loans from their balance sheets. Investors bought AAA securities at exceptional yields. Issuing banks earned fees and traded their own book, sometimes at their clients' expense. Meanwhile, rating agencies enjoyed a fourfold increase in revenues from 2000 to 2007.

Had investors conducted their own due diligence rather than rely on the credit rating agencies, the sub-prime crisis could have been avoided.

Compartmentalisation also pertains to climate science and the institutional framework within which the doubtful threat of man-made climate change has been assessed and addressed.

Lack of agreement within the climate science community on what drives global temperature is evident but the IPCC's *Summary for Policy Makers* creates the illusion of consensus.

Thus, in the same way that investors trusted the credit ratings agencies, financial institutions are accepting the biased and flawed "judgement" of the IPCC. From a risk management perspective, this has potentially catastrophic consequences.

In the case of the sub-prime market, collapse occurred once the value of mortgage backed securities and their derivatives was revealed to be much less than the credit rating agencies and issuing banks would have us believe.

Should temperatures plummet significantly, as they have in the past (See Section 10), the *low carbon economy* will be exposed as seriously deficient and vulnerable, ie. reality will reassert itself.

Armed with the imprimatur and "authority" of the UN, the IPCC set out to prove and promote the AGW theory. Other academic institutions were incentivised through funding and elevated status to support this effort. As momentum built, other institutions and businesses boarded the global warming gravy train which has now become almost unstoppable.

"Authority" does not accept challenge nor change direction easily and it is futile to expect a realistic revision of climate change dogma from institutional hierarchy; self-preservation prevails and reality will render many roles, institutions and businesses redundant, ie. undermine the rationale for their existence. Consequently, we cannot expect existing institutional structures to come to terms with reality of their own volition. We have to step out of institutional frameworks in order to explore the enormously complex issue of climate change from multiple perspectives. If we don't, we will continue towards potential disaster.

Authority tends to adopt a single perspective on issues, particularly when pushing for action.

In the story of The Six Blind Men and the Elephant⁵⁰, each of the blind men grasps a different part of the elephant's anatomy and tells his peers what an elephant is, based on limited information. None of them can agree because they aren't cooperating to describe the elephant but competing. In climate change, authority is determined to hang on to CO² emissions as the primary cause of global warming and is ignoring and dismissing all those climate scientists pointing to other influences of greater significance in a highly complex system which we don't yet fully understand.

13. Co-creative learning

This paper is the product of self-organising, collaborative research and analysis involving many disparate individuals and groups from around the world, drawing on information and ideas from a wide variety of sources, both contemporary and historic. This self-organising process is free from the strictures and limitations of hierarchical, institutional frameworks. The principles and process that underlie this effort have been documented and made available as a free, open source project⁵¹ which anyone can adopt or adapt for their own use.

Principles for critical thinking and analysis are paramount in arriving at a shared understanding of reality when it comes to climate change or any other complex problem pertaining to the political economy. CoCreative Learning and this paper rely on Bertrand Russell's *Liberal Decalogue* to avoid the traps which plague hierarchical, institutional structures; Russell lists 10 essential principles⁵² including these two:

5. *Have no respect for the authority of others, for there are always contrary authorities to be found.*

6. *Do not use power to suppress opinions you think pernicious, for if you do the opinions will suppress you.*

Institutional hierarchy often blinds us to reality. Collaborative, co-creative learning is essential to meet not just the challenge of climate change but to address the many complex problems manifest in today's political economy.

The complexity of the global economy and financial services requires a different approach to how we assess and mitigate macro or systemic risks, particularly those that would arise from unexpected climate change, ie. dramatic cooling.

50 The Six Blind Men and the Elephant http://www.constitution.org/col/blind_men.htm

51 <https://cocreativelearning.org/cocreative-learning/cocreative-learning-howto/>

52 A Liberal Decalogue: Bertrand Russell's Ten Commandments of Critical Thinking and Democratic Decency <https://www.brainpickings.org/2012/05/02/a-liberal-decalogue-bertrand-russell/>

About the author and this paper:

Clive Menzies is the coordinator of the MacroRisk Connect programme⁵³ which draws on the principles and process of CoCreative Learning, to assess and evaluate macro risks in the evolving political economy.

This paper is based on Clive's prior research⁵⁴ into the economics, politics and science of climate change and the work of Critical Thinking at the Free University⁵⁵ since 2012.

CoCreative Learning⁵⁶ is the free open source learning methodology developed within and used by Critical Thinking.

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53 The MacroRisk Connect Programme <https://macroriskconnect.com/program/>

54 Archive for the Climate Change Category <https://www.outersite.org/category/climate-change/>

55 Critical Thinking <http://www.freecriticalthinking.org/>

56 CoCreative Learning <https://cocreativelearning.org/>